



VITAMIN NEWS



VITAMIN PRODUCTS CO. • MILWAUKEE, WISCONSIN

VOL. 3

April 15, 1935

NO. 4

Page 49

MORE INFORMATION ON VITAMIN C

A year ago last month we summarized the consequences of Vitamin C deficiency somewhat as follows:

1. Scurvy symptoms of more or less degree (skin hemorrhages due to weakened capillaries, pyorrhea, loose teeth, decalcification of bones, susceptibility to dental caries).
2. Impaired adrenal (and thyroid) function, with consequent cardiac and vascular disease.
3. Anemia due to impaired iron metabolism.
4. Stomach and duodenal ulcers. (Vitamin C being essential to the normal secretion of gastric mucin).

Today we are beginning to see a little light as to the bio-chemical reactions that are back of these symptoms.

Sollmann, "Pharmacology", p. 367 says that a preponderance of potassium ions causes the parasympathetic nerves to be more sensitive to stimulus, while a preponderance of calcium ions increases the sensitiveness of the sympathetic nerves.

In Vitamin C deficiency we have a reduction in calcium ions, altering the calcium potassium ratio. It is possible that the result is hypersensitiveness of the parasympathetics because of the increase in relative potassium. The drug atropine, a parasympathetic paralyzer, is known to be specifically a remedy for gastric ulcer, and its action as such is no doubt due to the reduction of parasympathetic stimulus, causing among other things an abnormal secretion of gastric juice with its excessive acid.

It has been said on good authority that the action of Vitamin A is to maintain the function of the sympathetic nerves, and that of Vitamin C to maintain the autonomic, (in Howell's terminology, the parasympathetic). According to this, Vitamin A is a diffuser and distributor to nervous tissue of potassium. We know that Vitamin C is a diffuser and distributor of calcium to the tissues from the blood.

That explains how Vitamin C deficiency, through a reduction of calcium ions, can deaden the sympathetic (vasodilator) stimulus to the arteriole musculature, which is normally necessary to maintain dilation, and thereby interfere with the blood supply to certain organs or extremities, such as occurs for instance in certain forms of arthritis.

Acetylcholine is a new drug that renews circulation in such situations, and is known as a parasympathetic (and sympathetic) stimulant, opposing atropine in effect. Vitamin C, however, is the physiologic dilator of the arterioles, and there is no better example of the superiority of the therapeutic use of vitamins over drugs (if one were needed) than this, for here we have two drugs of opposite biologic reaction (one a parasympathetic paralyzer, the other a parasympathetic stimulator) that may both be indicated for the same basic disorder - Vitamin C deficiency.

It is in the later years of life that the consequences of Vitamin C deficiency become most apparent. It is undoubtedly a factor in the cause of cataract of the eye. H. K. Muller in "Nature" (London), Aug. 19, 1933 p. 280 says: "Experiments on the significance of the aqueous humor in the lens' metabolism....have shown that the power of the aqueous humor of cattle and of the rabbit to reduce methylene blue does not depend upon the presence of an enzyme, but essentially upon a reducing substance which....can be titrated with iodine (Vitamin C). The Vitamin C of the aqueous humor stands in close relationship to the metabolism of the lens. It is traceableonly in minimal amounts in the aqueous humor of the rabbit's eye after the lens has been removed....The lens either secretes the Vitamin C into the aqueous humor or it reduces some component of the aqueous humor already present. The Vitamin C of the aqueous humor must be brought in relationship with the genesis of cataract. Within four hours after oral administration of naphthalene in doses sufficient to cause cataract, the capacity of the aqueous humor to reduce iodine disappears." (Showing disappearance of the Vitamin C).

Probably all the vitamins concerned in calcium metabolism are factors in the treatment of cataract. (That includes all the vitamins with the possible exception of B). As each case of each patient presents a different combination of relative deficiencies, with the common added complication of more or less degeneration of the endocrines which are the medium of action for vitamins), it is difficult to make a blanket recommendation of treatment. Nevertheless, to date the majority of cases under treatment have reported favorable results, the time necessary to dissolve the opacities varying from four to fourteen months. The basic dosage is four "Catalyn" tablets a day and two doses of "V-P Phosphade" reduced to three "Catalyn" tablets where one or two special vitamin tablets daily may be considered necessary because of individual circumstances.

Edited by Royal Lee